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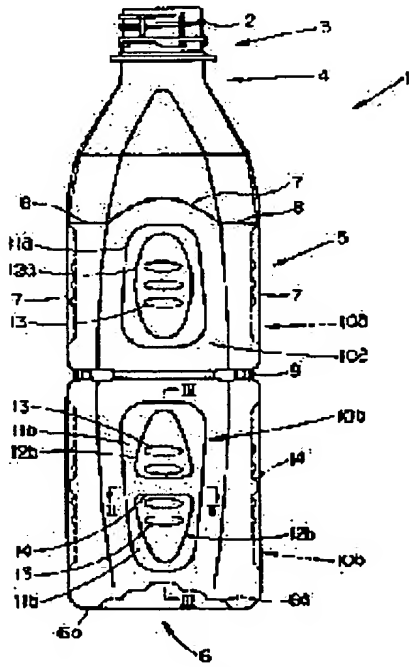
## (54) SYNTHETIC RESIN CONTAINER

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a synthetic resin container wherein a recess is not likely to cause creep strain even if containers are stacked and stored in numerous stages and the creep strain may not cause permanent deformation.
SOLUTION: The synthetic resin container comprises a mouth 3, a neck 4 connected to the mouth 3 increasing in diameter downwardly from the mouth 3, a body 5 connected to the neck 4 including an approximately rectangular cross sectional face and a bottom 6 connected to the body 5 for constituting a ground part 6b. Recesses 10a, 10b formed of parts of a surface 7 of the body 5 recessed inside the container for absorbing reduced pressure inside the container are provided. A rib 14 laid across the recess 10b is provided.



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CLAIMS

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[Claim(s)]
[Claim 1] The regio oralis which equips a periphery with a thread part, and the neck whose diameter connect to this regio oralis, and turn caudad and is expanded from this regio oralis, In the container made of synthetic resin equipped with the crevice which consists of a drum section which connects with this neck and is equipped with the cross section of an abbreviation square, and a pars basilaris ossis occipitalis which connects with this drum section and constitutes the touch-down section, is absorbed and formed in the interior of a container in a part of front face of this drum section, and absorbs the reduced pressure inside a container The container made of synthetic resin characterized by preparing the rib which crosses said crevice.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the container made of synthetic resin equipped with the crevice which a drum section is equipped with the cross section of an abbreviation square, is absorbed and formed in the interior of a container in a part of front face of this drum section, and absorbs the reduced pressure inside a container.
[0002]
[Description of the Prior Art] Conventionally, as containers, such as coffee and soy sauce, it consists of polyethylene terephthalate resin etc. and the container 15 made of synthetic resin equipped with the regio oralis 3 which equips a periphery with a thread part 2, a neck 4, a drum section 5, and the pars basilaris ossis occipitalis 6 that constitutes a ground plane is known like **4** .
[0003] The drum section 5 of said container 15 made of synthetic resin consists of a panel side 7, and the panel side 7 and the narrow connection side 8 of the width of face allotted among seven, and the cross section has become an abbreviation square according to the panel side 7. Although the cross section of a drum section 5 forms the octagon in the actual condition according to the panel side 7 and the connection side 8, since ****** is narrow compared with the panel side 7, the connection side 8 calls the configuration of this cross section an "abbreviation square" on these specifications. In addition, as for the connection of the panel side 7 and the connection side 8, beveling may be performed.
[0004] The panel side 7 is separated up and down by the circumferential groove 9 which covered the perimeter and was prepared in the abbreviation center section of the drum section 5, and top crevice 10a which is absorbed and formed in the interior of a container in a part of panel side 7, respectively, and absorbs the reduced pressure inside a container, and larger bottom crevice 10b than crevice 10a are prepared.
[0005] With the synthetic-resin container 15 of said configuration, if it is sealed with the cap (not shown) screwed on a thread part 2 after carrying out ordinary temperature restoration of the contents, such as said coffee and soy sauce, by the aseptic condition, since said contents will cause the oxygen and the chemical reaction in a container and oxygen will be consumed, the interior of a container is decompressed. Moreover, if said soft drink is cooled after seal also when elevated-temperature restoration is carried out for sterilization of the soft drink which does not contain carbonic acid, such as barley tea, oolong tea, and mineral water, in the synthetic-resin container 15, the interior of a container will be decompressed like said coffee, soy sauce, etc. Since said crevices 10a and 10b are established in the panel side 7 at this time, the synthetic-resin container 15 can absorb said reduced pressure, and can avoid deformation of the container by this reduced pressure.
[0006] However, reduction of the metsuke amount of the synthetic-resin container 15 is desired for reduction of raw material cost, and if said contents are accumulated on multistage after restoration and seal, such a synthetic-resin container 15 in recent years It is during storage un-arranging [ that the synthetic-resin container 15 of the lower berth becomes the permanent deformation which does not restore the creep deformation which said bottom crevice 10b reverses to the method of the outside of a container with the weight of the container 15 of an upper case also after a lifting and this deformation are removed in a load ].
[0007]
[Problem(s) to be Solved by the Invention] It cancels this un-arranging, after contents restoration, even if it puts and stores in multistage, a crevice cannot cause creep deformation easily, and this invention aims to let this creep deformation offer the container made of synthetic resin which does not cause permanent deformation.

[0008]
[Means for Solving the Problem] In order to attain this purpose, the container made of synthetic resin of this invention The regio oralis, the neck whose diameter connect to this regio oralis, and turn caudad and is expanded from this regio oralis, and the drum section which connects with this neck and is equipped with the cross section of an abbreviation square, In the container made of synthetic resin equipped with the crevice which consists of a pars basilaris ossis occipitalis which connects with this drum section and constitutes the touch-down section, is absorbed and formed in the interior of a container in a part of front face of this drum section, and absorbs the reduced pressure inside a container, it is characterized by preparing the rib which crosses said crevice.
[0009] Since the rib which crosses said crevice was prepared according to the container made of synthetic resin of this invention, when it put and stores in multistage after contents restoration and the weight of the container of an upper case is applied to the container made of synthetic resin of the lower berth, this crevice is a pile to a lifting about creep deformation. Moreover, since the rib which crosses said crevice is prepared according to the container made of synthetic resin of this invention, even if this crevice causes reversal deformation by the horizontal compressive load, it can restore deformation easily by removing a load.
[0010]
[Embodiment of the Invention] Next, it explains in more detail about the gestalt of operation of this invention, referring to an attached drawing. Drawing 1 R> 1 is [ the II-II line sectional view of drawing 1 and drawing 3 of the front view of the container made of synthetic resin of this operation gestalt and drawing 2 ] the III-III line sectional views of drawing 1 .
[0011] The container 1 made of synthetic resin of this operation gestalt is equipped with the regio oralis 3 which equips a periphery with a thread part 2, the neck 4, the drum section 5, and the pars basilaris ossis occipitalis 6 that constitutes a ground plane like **1** . A drum section 5 is allotted between the panel side 7, the panel side 7, and 7, and consists of a connection side 8 where ****** is narrow compared with the panel side 7, and the cross section has become an abbreviation square according to the panel side 7.
[0012] It connects with the regio oralis 3, and since the cross section of said neck 4 is circular gradually, it changes to an abbreviation square, while turning caudad and expanding the diameter from the regio oralis 3. Moreover, said pars basilaris ossis occipitalis 6 is equipped with bulge section 6a which bulges inside a container, and even ground-plane 6b is formed in the periphery section of bulge section 6a.
[0013] The panel side 7 is separated up and down by the circumferential groove 9 which covered the perimeter and was prepared in the abbreviation center section of the drum section 5, a part of panel side 7 is absorbed and formed in the interior of a container, respectively, and top crevice 10a which absorbs the reduced pressure inside a container, and bigger bottom crevice 10b than crevice 10a are prepared. Said crevices 10a and 10b consist of slant faces 11a and 11b absorbed in the interior of a container from the panel side 7, and bases 12a and 12b surrounded by slant faces 11a and 11b, and two or more 1st ribs 13 which bulge in the method of the outside of a container further are formed in Bases 12a and 12b. Moreover, while bulging in the method of the outside of a container in the center of abbreviation, the 2nd rib 14 which crosses crevice 10b is formed in bigger base 12of bottom crevice 10b b than crevice 10a, and crevice 10b is bisected with the 2nd rib 14.
[0014] The 1st four ribs 13 are formed in base 12of top crevice 10a a at base 12of three-piece and bottom crevice 10b b, and every 2nd two ribs 14 are arranged up and down in base 12b. Moreover, as shown in drawing 2 and drawing 3 , the 2nd rib 14 is larger than the 1st rib 13, and the top-most vertices are located in the inner direction more slightly than the panel side 7.
[0015] Next, full injection restoration of the mineral water was carried out by ordinary temperature restoration, and on both sides of the drum section 5 of the container 1 made of synthetic resin which screwed on and sealed the cap to the thread part 2, horizontal compression was carried out from both sides with the compression test vessel, and with the internal pressure of this horizontal compression, Crevices 10a and 10b measured the compressive force (kgf) when carrying out reversal deformation to the method of the outside of a container, and considered as the index of creep-proof deformans in the upper part of a circumferential groove 9. The container made of synthetic resin is considered to excel in creep-proof deformans, so that the value of said compressive force is large. About five sample offering numbers, the stability of the deformation when removing said compressive force and this compressive force is shown in Table 1.
[0016] For the comparison, horizontal compression was carried out with the compression test vessel like said container 1 made of synthetic resin about what improved in part the conventional container 15 (example 1 of a comparison) made of synthetic resin shown in drawing 4 and drawing 5 , and the container 15 made of synthetic resin (example 2 of a comparison), drawing 6 or the container 18 (example 3 of a comparison)

made of synthetic resin of **8** , drawing 9 , or the container 19 (example 4 of a comparison) made of synthetic resin of **11** . About five sample offering numbers, the stability of the deformation when removing compressive force (kgf) and this compressive force when Crevices 10a and 10b carry out reversal deformation at the method of the outside of a container is collectively shown in Table 1 with the internal pressure of said horizontal compression.

[0017] The container 15 made of synthetic resin of the example 1 of a comparison is a configuration as the term of the above "a Prior art" described. In more detail, the bases 12a and 12b of said crevices 10a and 10b are flat surfaces, and five ribs 13 which bulge in the method of the outside of a container from Bases 12a and 12b are formed in base 12of top crevice 10a a at base 12of three-piece and bottom crevice 10b b. Moreover, as shown in drawing 5 (a), the connection 16 of slant-face 11b and base 12b crosses in the shape of a straight line.

[0018] The container made of synthetic resin of the example 2 of a comparison has the same composition as the container 15 made of synthetic resin of the example 1 of a comparison except for the connection 17 of slant-face 11b and base 12b having become curved surface-like, as shown in drawing 5 (b).

[0019] Moreover, as shown in drawing 6 and drawing 7 , the container 18 made of synthetic resin of the example 3 of a comparison is large as compared with the container 15 made of synthetic resin in the width of face of slant-face 11b of bottom crevice 10b, and is the same configuration as the container 15 made of synthetic resin of the example 1 of a comparison except for constituting the width of face of base 12b narrowly.

[0020] Moreover, the container 19 made of synthetic resin of the example 4 of a comparison is the same configuration as the container 15 made of synthetic resin of the example 1 of a comparison except for the bulge section 20 which, on the whole, bulged the center section of base 12b of bottom crevice 10b on the container outside being formed, as shown in drawing 9 thru/or drawing 11 .

[0021]

[Table 1]

| | | 実施形態 | 比較例1 | 比較例2 | 比較例3 | 比較例4 |
|---|---|---|---|---|---|---|
| 反転変形時の圧縮力 | 試料1 | 16.4 | 7.5 | 6.8 | 7.0 | 10.0 |
| | 2 | 15.0 | 7.8 | 7.5 | 7.4 | 10.3 |
| | 3 | 18.8 | 7.9 | 7.1 | 7.5 | 10.0 |
| | 4 | 15.8 | 8.2 | 7.5 | 7.6 | 10.6 |
| | 5 | 16.6 | 7.9 | 7.4 | 7.5 | 9.8 |
| | 平均 | 16.5 | 7.9 | 7.3 | 7.4 | 10.1 |
| 復元性 | | ○ | × | × | × | × |

反転変形時の圧縮力：kgf

復元性：○…圧縮力を取り除くと復元する

×…圧縮力を取り除いても復元しない（永久変形）

[0022] As shown in Table 1, reversal deformation restores the container 1 made of synthetic resin of this operation gestalt by **** which removes the load (compressive force) used as the cause even if the compressive force at the time of reversal deformation is large and reversal deformation arises.

[0023] To the container 1 made of synthetic resin of this operation gestalt, with the conventional container 15 made of synthetic resin of the example 1 of a comparison, reversal deformation arises in about 50% of compressive force of the container 1 made of synthetic resin, and even if it removes the load (compressive force) used as the cause, reversal deformation is not restored. Reversal deformation arises in compressive force equivalent to the conventional container 15 made of synthetic resin of the example 1 of a comparison, and the container made of synthetic resin of the example 2 of a comparison and the container 18 made of synthetic resin of the example 3 of a comparison do not restore reversal deformation, even if it removes the load (compressive force) used as the cause.

[0024] Moreover, the container 19 made of synthetic resin of the example 4 of a comparison of the compressive force which reversal deformation produces is larger than the conventional container 15 made of synthetic resin of the example 1 of a comparison, and at this point, although improved, if reversal

deformation arises, even if it will remove the load (compressive force) used as that cause, it does not restore reversal deformation.

[0025] Therefore, according to the container 1 made of synthetic resin of this operation gestalt, while the rigidity over reversal deformation is improved remarkably, it is clear from Table 1 to have the outstanding stability.

[0026] In addition, with this operation gestalt, although the 2nd rib 14 is formed so that bigger bottom crevice 10b may be crossed, it may be prepared in top crevice 10a, and may be prepared in both crevices 10a and 10b.

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DRAWINGS

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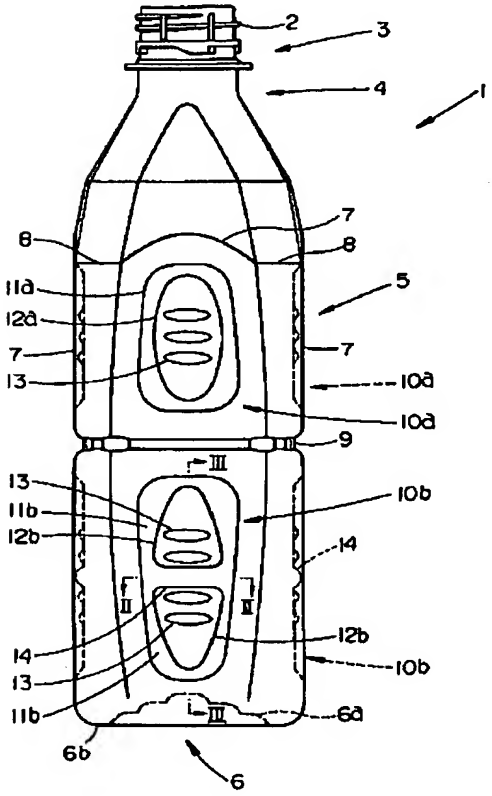
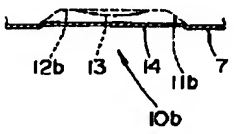
[Drawing 1]
FIG. 1

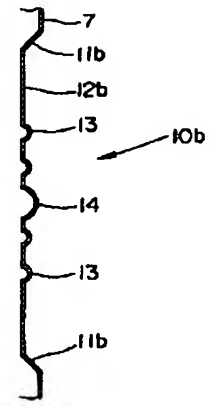



[Drawing 2]
FIG. 2




[Drawing 3]

FIG. 3




[Drawing 5]

FIG. 5(a)

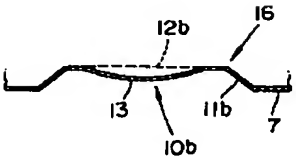
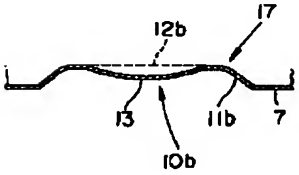
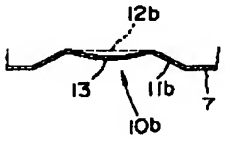



FIG. 5(b)



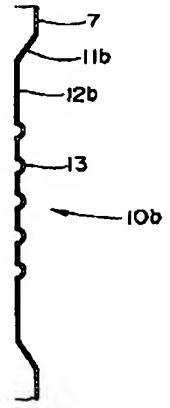

[Drawing 7]

FIG. 7

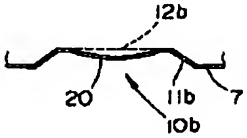



[Drawing 8]

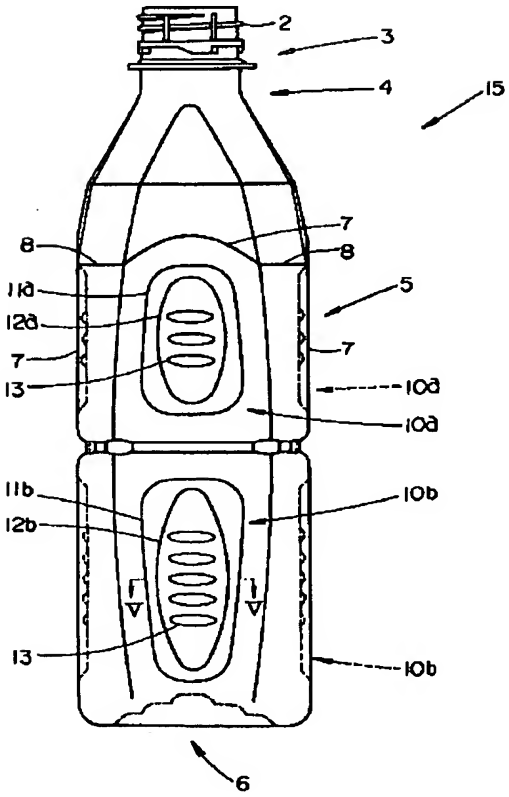
FIG. 8




[Drawing 10]
FIG.10

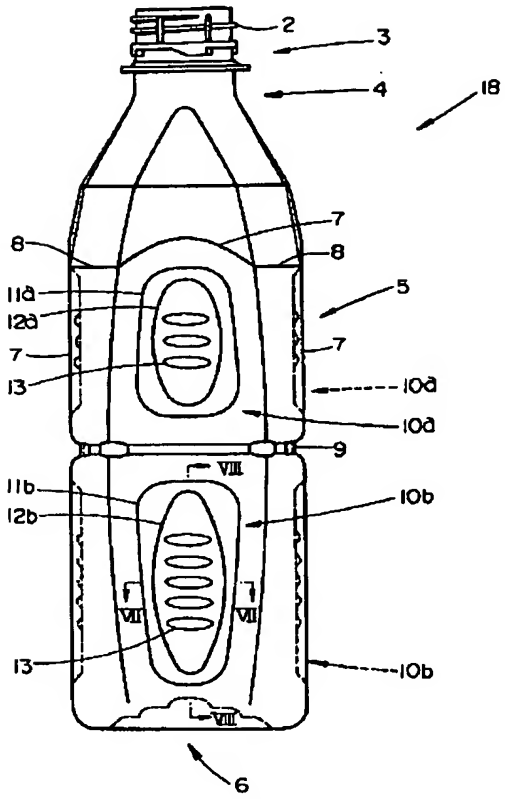



[Drawing 4]
FIG. 4



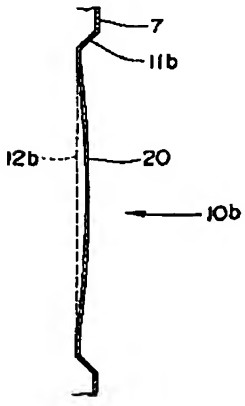

[Drawing 6]

FIG. 6



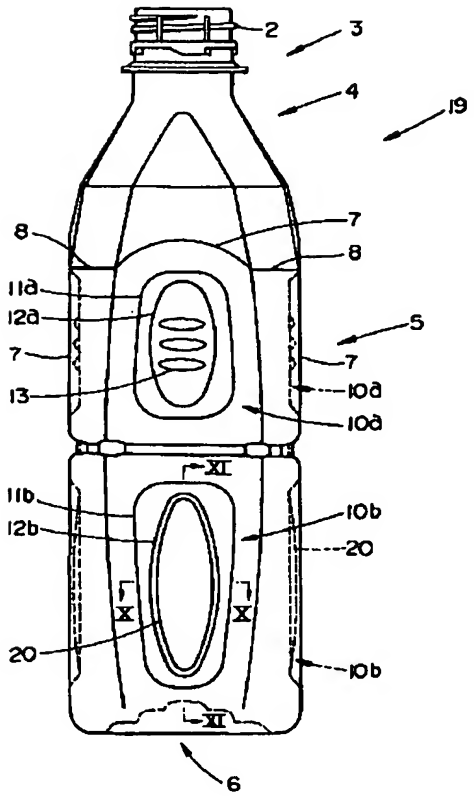

[Drawing 11]

FIG. 11




[Drawing 9]

FIG. 9

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| Ｂ６５Ｄ | 1/02 | | Ｂ６５Ｄ | 1/02 | Ｂ |
| | 1/42 | | | 1/42 | |
| // Ｂ６５Ｄ | 1/18 | | | 1/18 | |

審査請求　未請求　請求項の数１　ＯＬ　（全 ６ 頁）

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(22)出願日　平成９年(1997)12月22日

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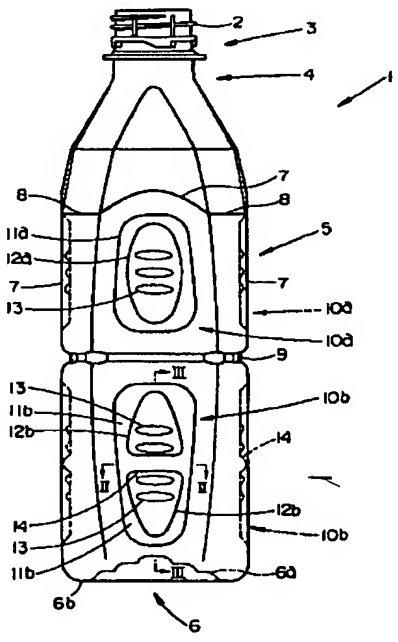
(54)【発明の名称】　合成樹脂製容器

(57)【要約】
【課題】内容物充填後、多段に積み重ねて貯蔵しても凹部がクリープ変形を起こしにくく、該クリープ変形が永久変形を起こさない合成樹脂製容器を提供する。
【解決手段】口部３と、該口部３に接続し該口部３から下方に向けて拡径する首部４と、該首部４に接続し略四角形の横断面を備える胴部５と、該胴部５に接続して接地部６ｂを構成する底部６とからなる。胴部５の表面７の一部を容器内部に没入形成され、容器内部の減圧を吸収する凹部１０ａ，１０ｂを備える。凹部１０ｂを横断するリブ１４を設ける。

FIG. 1



【特許請求の範囲】

【請求項１】外周にねじ部を備える口部と、該口部に接続し該口部から下方に向けて拡径する首部と、該首部に接続し略四角形の横断面を備える胴部と、該胴部に接続して接地部を構成する底部とからなり、該胴部の表面の一部を容器内部に没入して形成され容器内部の減圧を吸収する凹部を備える合成樹脂製容器において、前記凹部を横断するリブを設けたことを特徴とする合成樹脂製容器。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本発明は、胴部が略四角形の横断面を備え、該胴部の表面の一部を容器内部に没入して形成され容器内部の減圧を吸収する凹部を備える合成樹脂製容器に関するものである。

【０００２】

【従来の技術】従来、コーヒー、醤油等の容器として、ポリエチレンテレフタレート樹脂等からなり、図４示のように、外周にねじ部２を備える口部３と、首部４と、胴部５と、接地面を構成する底部６とを備える合成樹脂製容器１５が知られている。

【０００３】前記合成樹脂製容器１５の胴部５は、パネル面７と、パネル面７，７間に配せられた幅の狭い接続面８とからなり、その横断面はパネル面７により略四角形になっている。胴部５の横断面は、パネル面７と接続面８とにより実際には八角形を形成しているが、接続面８はパネル面７に較べて極く幅が狭いので、本明細書では該横断面の形状を「略四角形」と称する。尚、パネル面７と接続面８との接続部は面取りが施されていてもよい。

【０００４】パネル面７は、胴部５の略中央部に全周に亘って設けられた周溝９により上下に隔てられ、それぞれパネル面７の一部を容器内部に没入して形成され容器内部の減圧を吸収する上側凹部１０ａと、凹部１０ａより大きい下側凹部１０ｂとが設けられている。

【０００５】前記構成の合成樹脂容器１５では、前記コーヒー、醤油等の内容物を無菌状態で常温充填した後、ねじ部２に螺着されるキャップ（図示せず）により密封されると、前記内容物が容器内の酸素と化学反応を起こして酸素が消費されるために、容器内部が減圧される。また、合成樹脂容器１５に、麦茶、ウーロン茶、ミネラルウォーター等のような炭酸を含まない清涼飲料を殺菌のために高温充填したときにも、密封後に前記清涼飲料が冷却されると、前記コーヒー、醤油等と同様に、容器内部が減圧される。このとき、合成樹脂容器１５は、パネル面７に前記凹部１０ａ，１０ｂが設けられているので、前記減圧を吸収して該減圧による容器の変形を避けることができる。

【０００６】しかしながら、近年、原料コストの低減のために合成樹脂容器１５の目付量の低減が望まれ、このような合成樹脂容器１５を、前記内容物を充填、密封後、多段に積み重ねておくと、貯蔵中に下段の合成樹脂容器１５が上段の容器１５の重量により前記下側凹部１０ｂが容器外方に反転するクリープ変形を起こし、該変形は荷重が除かれた後にも復元しない永久変形になるという不都合がある。



【０００７】

【発明が解決しようとする課題】本発明は、かかる不都合を解消して、内容物充填後、多段に積み重ねて貯蔵しても凹部がクリープ変形を起こしにくく、該クリープ変形が永久変形を起こさない合成樹脂製容器を提供することを目的とする。

【０００８】

【課題を解決するための手段】かかる目的を達成するために、本発明の合成樹脂製容器は、口部と、該口部に接続し該口部から下方に向けて拡径する首部と、該首部に接続し略四角形の横断面を備える胴部と、該胴部に接続して接地部を構成する底部とからなり、該胴部の表面の一部を容器内部に没入して形成され容器内部の減圧を吸収する凹部を備える合成樹脂製容器において、前記凹部を横断するリブを設けたことを特徴とする。

【０００９】本発明の合成樹脂製容器によれば、前記凹部を横断するリブが設けられているので、内容物充填後、多段に積み重ねて貯蔵し、下段の合成樹脂製容器に上段の容器の重量がかかったときに、該凹部がクリープ変形を起こしにくい。また、本発明の合成樹脂製容器によれば、前記凹部を横断するリブが設けられているので、該凹部は横圧縮荷重により反転変形を起こしても、荷重を取り除くことにより、容易に変形を復元することができる。

【００１０】

【発明の実施の形態】次に、添付の図面を参照しながら本発明の実施の形態についてさらに詳しく説明する。図１は本実施形態の合成樹脂製容器の正面図、図２は図１のＩＩ－ＩＩ線断面図、図３は図１のＩＩＩ－ＩＩＩ線断面図である。

【００１１】本実施形態の合成樹脂製容器１は、図１示のように、外周にねじ部２を備える口部３と、首部４と、胴部５と、接地面を構成する底部６とを備えている。胴部５はパネル面７と、パネル面７，７間に配せられパネル面７に較べて極く幅が狭い接続面８とからなり、その横断面は、パネル面７により略四角形になっている。

【００１２】前記首部４は、口部３に接続し、口部３から下方に向けて拡径すると共に、その横断面が次第に円形から略四角形に変化する。また、前記底部６は、容器内部に膨出する膨出部６ａを備え、膨出部６ａの外周部に平らな接地面６ｂが形成されている。

【００１３】パネル面７は、胴部５の略中央部に全周に亘って設けられた周溝９により上下に隔てられ、それぞ

れパネル面７の一部を容器内部に没入して形成され、容器内部の減圧を吸収する上側凹部１０ａと、凹部１０ａより大きな下側凹部１０ｂとが設けられている。前記凹部１０ａ，１０ｂは、パネル面７から容器内部に没入する斜面１１ａ，１１ｂと、斜面１１ａ，１１ｂに囲まれた底面１２ａ，１２ｂとからなり、底面１２ａ，１２ｂにはさらに容器外方に膨出する複数の第１リブ１３が設けられている。また、凹部１０ａより大きな下側凹部１０ｂの底面１２ｂには、その略中央に容器外方に膨出すると共に凹部１０ｂを横断する第２リブ１４が設けられ、凹部１０ｂが第２リブ１４により二分されている。

【００１４】第１リブ１３は、上側凹部１０ａの底面１２ａに３個、下側凹部１０ｂの底面１２ｂに４個設けられ、底面１２ｂでは第２リブ１４の上下に２個ずつ配設されている。また、図２及び図３に示す様に、第２リブ１４は第１リブ１３より大きく、その頂点はパネル面７よりもわずかに内方に位置している。

【００１５】次に、ミネラルウォーターを常温充填により満注充填して、ねじ部２にキャップを螺着して密封した合成樹脂製容器１の胴部５を周溝９の上方で、圧縮試験器により両側から挟んで横圧縮し、該横圧縮の内圧により、凹部１０ａ，１０ｂが容器外方に反転変形したときの圧縮力（ｋｇｆ）を測定して、耐クリープ変形性の指標とした。合成樹脂製容器は、前記圧縮力の値が大きいほど、耐クリープ変形性に優れているものと考えられる。供試本数５本について、前記圧縮力及び該圧縮力を取り除いたときの変形の復元性を表１に示す。

【００１６】比較のために、図４及び図５に示す従来の合成樹脂製容器１５（比較例１）、合成樹脂製容器１５を一部改良したもの（比較例２）、図６乃至図８示の合成樹脂製容器１８（比較例３）、図９乃至図１１示の合＊成樹脂製容器１９（比較例４）について、前記合成樹脂製容器１と同様にして圧縮試験器により横圧縮した。供試本数５本について、前記横圧縮の内圧により、凹部１０ａ，１０ｂが容器外方に反転変形したときの圧縮力（ｋｇｆ）及び該圧縮力を取り除いたときの変形の復元性を表１に併せて示す。

【００１７】比較例１の合成樹脂製容器１５は、前記「従来の技術」の項で述べたとおりの構成である。さらに詳しくは、前記凹部１０ａ，１０ｂの底面１２ａ，１２ｂは平面となっており、底面１２ａ，１２ｂから容器外方に膨出するリブ１３が、上側凹部１０ａの底面１２ａに３個、下側凹部１０ｂの底面１２ｂに５個設けられている。また、図５（ａ）に示す様に、斜面１１ｂと底面１２ｂとの接続部１６が直線状に交差している。

【００１８】比較例２の合成樹脂製容器は、図５（ｂ）に示す様に斜面１１ｂと底面１２ｂとの接続部１７が曲面状になっていることを除いて、比較例１の合成樹脂製容器１５と同一の構成となっている。

【００１９】また、比較例３の合成樹脂製容器１８は、図６及び図７に示すように、合成樹脂製容器１５に比較して下側凹部１０ｂの斜面１１ｂの幅を広く、底面１２ｂの幅を狭く構成されていることを除いて、比較例１の合成樹脂製容器１５と同一の構成である。

【００２０】また、比較例４の合成樹脂製容器１９は、図９乃至図１１に示すように、下側凹部１０ｂの底面１２ｂの中央部を全体的に容器外側に膨出させた膨出部２０が形成されていることを除いて、比較例１の合成樹脂製容器１５と同一の構成である。

【００２１】

【表１】

| | | 実施形態 | 比較例１ | 比較例２ | 比較例３ | 比較例４ |
|---|---|---|---|---|---|---|
| 反転変形時の圧縮力 | 試料１ | １６．４ | ７．５ | ６．８ | ７．０ | １０．０ |
| | ２ | １５．０ | ７．８ | ７．５ | ７．４ | １０．３ |
| | ３ | １８．８ | ７．９ | ７．１ | ７．５ | １０．０ |
| | ４ | １５．８ | ８．２ | ７．５ | ７．６ | １０．６ |
| | ５ | １６．６ | ７．９ | ７．４ | ７．５ | ９．８ |
| | 平　均 | １６．５ | ７．９ | ７．３ | ７．４ | １０．１ |
| 復　元　性 | | ○ | × | × | × | × |

反転変形時の圧縮力：ｋｇｆ

復元性：○…圧縮力を取り除くと復元する

×…圧縮力を取り除いても復元しない（永久変形）

【００２２】表１のように、本実施形態の合成樹脂製容器１は、反転変形時の圧縮力が大きく、また反転変形が生じてもその原因となる荷重（圧縮力）を取り除くことにより、反転変形が復元する。

【００２３】本実施形態の合成樹脂製容器１に対して、比較例１の従来の合成樹脂製容器１５では、合成樹脂製

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容器１の約５０％の圧縮力で反転変形が生じ、その原因となる荷重（圧縮力）を取り除いても反転変形は復元しない。比較例２の合成樹脂製容器及び比較例３の合成樹脂製容器１８は比較例１の従来の合成樹脂製容器１５と同等の圧縮力で反転変形が生じ、その原因となる荷重（圧縮力）を取り除いても反転変形は復元しない。

【００２４】また、比較例４の合成樹脂製容器１９は、反転変形が生じる圧縮力は比較例１の従来の合成樹脂製容器１５より大きく、この点では改良されているものの、反転変形が生じるとその原因となる荷重（圧縮力）を取り除いても反転変形は復元しない。

【００２５】従って、表１から本実施形態の合成樹脂製容器１によれば、反転変形に対する剛性が著しく改善されているとともに、優れた復元性を備えていることが明らかである。

【００２６】尚、本実施形態では、第２リブ１４は、より大きな下側凹部１０ｂを横断する様に設けられているが、上側凹部１０ａに設けられてもよく、両方の凹部１＊０ａ，１０ｂに設けられていてもよい。

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【図面の簡単な説明】

【図１】本発明の合成樹脂製容器の一実施形態を示す正面図。

【図２】図１のＩＩ－ＩＩ線断面図。

【図３】図１のＩＩＩ－ＩＩＩ線断面図。

【図４】従来の合成樹脂製容器の一例を示す正面図。

【図５】図４のＶ－Ｖ線断面図。

【図６】合成樹脂製容器の一比較例を示す正面図。

【図７】図６のＶＩＩ－ＶＩＩ線断面図。

【図８】図６のＶＩＩＩ－ＶＩＩＩ線断面図。

【図９】合成樹脂製容器の他の比較例を示す正面図。

【図１０】図９のＸ－Ｘ線断面図。

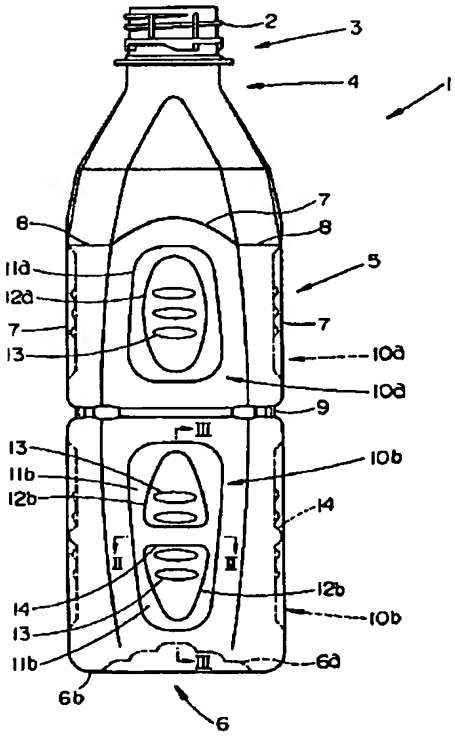
【図１１】図９のＸＩ－ＸＩ線断面図。

【符号の説明】

１…合成樹脂製容器、　２…ねじ部、　３…口部、　４…首部、　５…胴部、６…底部、　７…胴部の表面、　１０ａ，１０ｂ…凹部、　１４…凹部を横断するリブ。

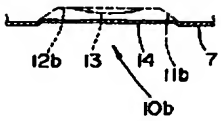
【図１】

FIG. 1



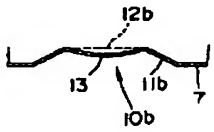

【図２】

FIG. 2



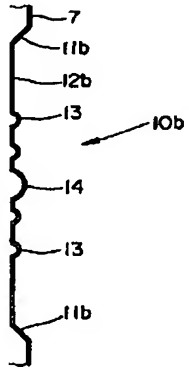

【図７】

FIG. 7



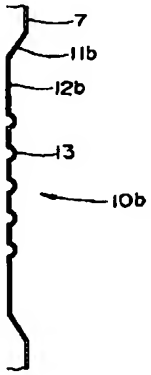

【図３】

FIG. 3




【図８】

FIG. 8




【図５】

FIG. 5(a)

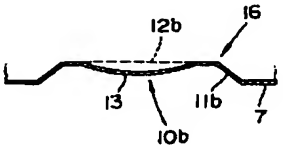
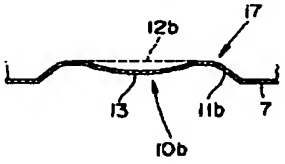
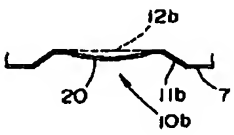



FIG. 5(b)



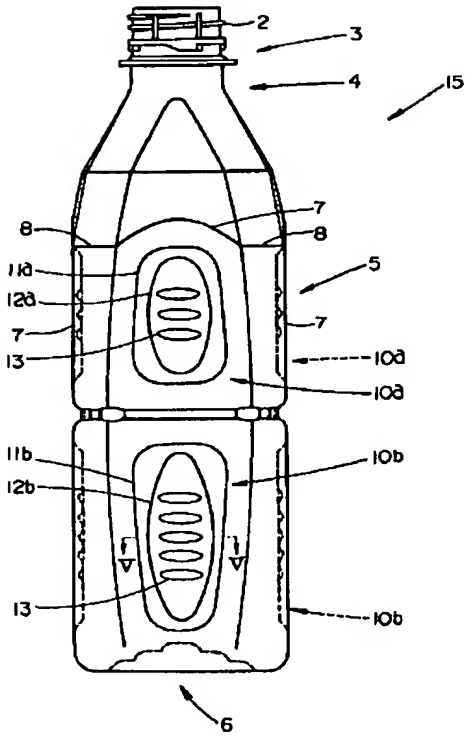

【図１０】

FIG.10



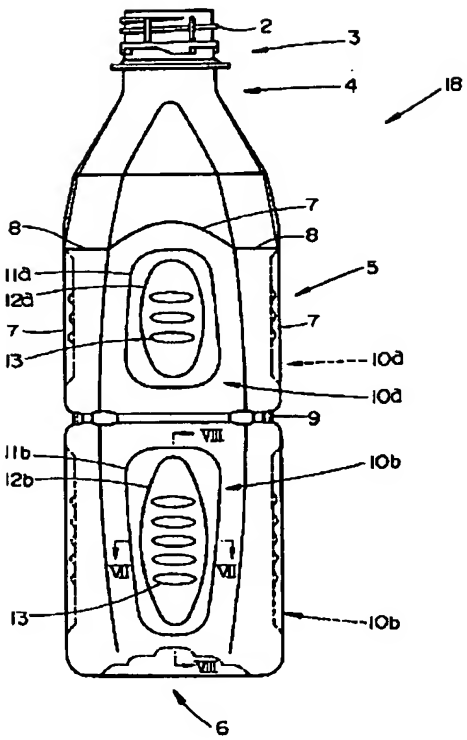
【図４】

FIG. 4



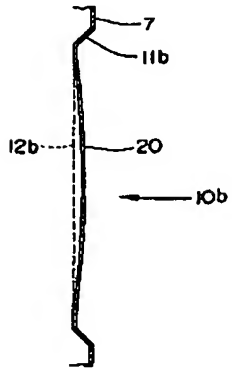

【図６】

FIG. 6




【図１１】

FIG. 11



【図９】

FIG. 9